APPLICATION

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POSTAL SERVICES METHOD AND SYSTEM

FIELD OF THE INVENTION

The invention relates to the field of Internet technologies and in particular to providing postal services.

BACKGROUND OF THE INVENTION

The type of postal service known today was introduced in 1837. Around this time the penny post began to be prepaid rather than paid for on receipt and the cutting of letter boxes in doors or the use of mail boxes outside a person's home meant that a letter need no longer be handed to the addressee.

Although the postal service and the systems that are used to sort and route mail have changed since these early times, the way in which an envelope or a parcel is addressed i.e., an addressee field, a return to field and a stamp and the functionality offered by each of these fields have not developed through the years.

It is only in recent years that postal services have started to make services available over the World Wide Web. For example, it is now possible to buy stamps on-line and change an address if moving home, but for the majority of services a user is still required to travel to their local post office. Taking an example of a mail holding service a user is a) required to travel to their local post office and fill out a form detailing a date range in which the mail should be held at a sorting office and not be delivered to the addressee's premises and b) detail all

the individual names of the addressee's who may have mail delivered whilst away. The latter is frustrating as an addressee may be known by a variety of different names.

Once the mail holding form is completed the service can take up to seven working days to activate. This time frame is unacceptable if an addressee is suddenly required to go away with less than seven working days notice.

Further problems arise when the addressee is travelling to different locations and wishes to have their mail 'follow them'. The addressee is required to fill out a form for each location to be visited and the associated date range. This approach is time consuming, requires the addressee to be organised, know where they are going to be at a particular point in time and it may take the postal service a number of days to activate the service.

People send emails and buy goods on-line over the Internet. People usually use an email address as an identifier and supply a vendor with credit card details to complete a transaction. People are uneasy about giving away their personal information and prefer some form of anonymity in a virtual environment.

One approach to solving this problem is offered by US patent application 2002/0103766 A1 in the name of Leber, C et al describes a controlled purchase system dealing with virtual purchase information. Leber, C et al enables a customer to make a purchase and receive delivery of the purchased item without providing personal and financial account information to the merchant. A disadvantage of the Leber, C at al approach is that a single address is associated with a 'Veto' account and therefore provides no ability to provide such services as

redirection to an alternative receiver and therefore can be described as 'static' service.

Another type of service that is offered is tracking an object from the time that it is sent until it reaches its destination. US patent US005869819A in the name of Knowles, C et al provides an Internet based system and method for tracking objects bearing URL bar code symbols. Knowles, C et al uses URL/ZIP encoded bar code symbols on parcels and packages for use in a shipping system. Each person is required to carry with them a portable package delivery subsystem to interpret the encoded bar code symbols. Although Knowles, C et al allows for a package to be tracked and its destination to be changed on route Knowles, C et al require the use of barcode tracking technologies and would require the user to access the providers web site for the tracking information. Further Knowles, C et al does not lend itself to current mail addressing formats.

While the advent of instantaneous communication such as email provides users with a high level of functionality and the concept of sending an email being equivalent to the delivery of the email, postal services are falling behind and do not provide the functionality and flexibility that email and other forms of communication offer.

Therefore there is a need within the art for redefining postal services to enable a postal service to execute a number of services as defined by a user with the dynamic functionality offered by other forms of instantaneous communication.

OBJECTS AND SUMMARY OF THE INVENTION

Viewed from a first aspect the present invention provides a method for routing a mail object in a postal service to a designated person, the method comprising the steps of: locating a user profile from a registered pseudo name displayed on the mail object; and executing one or more mail services as selected by a user in the user profile.

A user of a mail service is able to register a pseudo name and place the registered pseudo name on a mail object such as an envelope or a parcel. The pseudo name is used as a unique key to access an associated user profile. The user is able to set up one or more of mail services via a plurality of profiles and the mail services are executed once the mail object is received and sorted at a sorting office or a distribution centre.

The user is able to access a plurality of mail services such as 'follow me'. The 'follow me' mail service allows a user to define where mail objects that are addressed to a registered pseudo name are delivered. A user can modify their profile at any time and the modifications have immediate effect. A user does not have to wait several days for the service to be executed.

In one embodiment the present invention provides a method wherein a profile comprises one or more sub profiles for example a franking profile comprising a method of payment for a mail object, a naming profile comprising name and address information and a dynamic mail function profile comprising a list of mail services available to a user.

A mail service may comprise a follow me mail service, a mail delivery notification service, a vanity stamp service and a bulk mail service. Hence a user is able to take advantage of many postal services that can be accessed and modified dynamically.

The profiles, sub profiles and mail services are not necessary limited to the sub profiles and mail services defined here. It will be appreciated that further profiles, sub profiles and mail services could be implemented without departing from the spirit and scope of the invention.

Advantageously the invention allows for a user of a registered pseudo name to update user specific information to enable the redirection of a mail object. Thus a mail object is able to follow the addressee to wherever is specified in the profile.

A further advantage provided by the present invention allows the user of the mail notification service to display a registered pseudo name in a return field on a mail object and specify an automated electronic delivery notice to an email address. When a mail object is delivered to its destination a user will be notified by an email to a specified email account.

In another embodiment a vanity stamp service is used to register a personalised image to be displayed on a mail object. A user is able to decide which graphic they would like displayed on the mail object instead of a standard stamp. The graphic could be a picture of a family pet, a picture of a holiday destination or a picture of the family, to name but a few examples.

A user is also able to block unwanted mail by accessing the bulk mail service thus, only sending a mail object to registered pseudo names who do not have bulk mail blocked. The bulk mail service allows a user to block unwanted mail is an easy manner. It will no longer be necessary to sift through several items of post to find the mail objects that are relevant to the addressee.

Each profile and one or more sub profile comprise a valid date range defining when the profile and one or more sub profiles are active and therefore a user can set a date range for a mail service and after expiry of the date range the mail service will revert back to a predate range profile.

Viewed from a second aspect the present invention provides a postal service for routing a mail object to a designated person, comprising a registration service for registering a psuedo name to be displayed on the mail object and a user profile for selecting one or more mail services; a sorting service for determining the registered psuedo name displayed on the mail object to locate the user profile; and executing one or more mail services as defined in the user profile.

Viewed from a third aspect the present invention provides a system for routing a mail object in a postal service to a designated person, the system comprising: means for registering a pseudo name and selecting one or more mail services in a user profile; means for determining a registered pseudo name to locate a user profile associated with the registered pseudo name; and means for executing one or mail services defined in the user profile.

Viewed from a fourth aspect the present invention provides a computer program product directly loadable into the internal

memory of a digital computer, comprising software code portions for performing the steps of any one of claim 1 to claim 20 when said product is run on a computer.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described by way of example only, with reference to the accompanying drawings, in which:

Figure 1, illustrates the operational steps that the present invention performs, according to a preferred embodiment of the present invention;

Figures 2a-2c, illustrate a plurality of pseudo names, according to a preferred embodiment of the present invention;

Figure 3a, illustrates a current envelope and addressing format, as is well known in the art;

Figure 3b illustrates envelope formatting according to a preferred embodiment of the present invention;

Figure 4, illustrates a pseudo name profile structure and it's corresponding naming profile structure, according to a preferred embodiment of the present invention; and

Figure 5, illustrates a franking profile, according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Today, a mail object has three areas of content:

a) a mandatory addressee (name/address) field
b) an optional return name/address field
c) a mandatory stamp

The invention enables each of the above fields to provide enhanced functionality to a sender and a receiver of a mail object. A mail object is defined as an envelope, a parcel, a package or any other object that is suitable for sending through a postal service or a delivery service.

In the mandatory addressee (name/address) field and the optional return name/address field, a sender may specify a pseudo name in place of either or both fields. In place of the mandatory stamp, a sender may leave the field empty (i.e., without a stamp) and set up alternative billing arrangements to pay for the carriage. In addition, the sender may place an additional designation on the envelope, which may result in additional mail services to the sender.

To access the redefined postal service firstly, a user must register a pseudo name. A pseudo name is a unique identifier that identifies a user for example, an anagram of a name, a combination of letters, a collection of numbers and letters, an email address, the name of a pet or a user's legal name.

Each pseudo name is associated with a profile and the profile comprises one or more sub profiles. A sub profile may define a franking profile, a mail blocking profile, and a personal preferences profile depending on the type of sub profile selected. A sub profile comprises a plurality of elements for example a users name, a home address, a current delivery address, an alternate delivery name and address and an alternate pseudo name. The profile and sub profiles contain a date range within which they are active. The sum of these profiles constitute a series of mail services available to a user of the registered pseudo name.

A pseudo name can be registered, profiles created and modified by using an Internet based service or through any designated central reservation management facility.

Referring to Figure 1, at step 100 a user of the postal service (a user is defined as a person, a business or other legal entity) registers a pseudo name for example, 'tracom' and providing no other user has registered the pseudo name 'tracom', the user creates their individual profile and configures one or more sub profiles for example, a naming profile and a franking profile to define one or more mail services at step 110.

Once created a user can access their profiles associated with their registered pseudo name at any time and modify their profile as desired. This enables future mail objects to be delivered as directed by one or more modified profiles for example, 'tracom's' profile may state that today all mail objects should be delivered to IBM Hursley. 'tracom' maybe in Chicago on business for the next 10 days and therefore wishes to have all mail objects redirected to IBM Chicago for the next 10 days.

To enable the redirection of all 'tracom's' mail objects, 'tracom' modifies a dated address profile and updates the 'send to' address field to state for the next 10 days all mail objects are to be sent to IBM Chicago.

Each profile has a designated time frame in which it is active and after the designated time frame has expired a user is required to access the appropriate profile to reactivate a particular mail service. As soon a modified profile is saved the changes are immediately updated in a data store which is replicated throughout a number of storage facilities to provide immediate effect. Therefore a user does not have to wait a number of days for the service to be activated. The modifications can be targeted to a unique mail object or to all mail objects of the pseudo name 'tracom'.

The profile and sub profiles define one or more mail services. A mail service may be defined by a dynamic mail function pseudo name. Unlike the pseudo name 'tracom' the dynamic mail function pseudo name does not have to be a unique pseudo name. The same pseudo name can be used by different users to imply the same or a different mail service for example, the registered pseudo name 'tracom' may use the pseudo name 'redirect' to imply a redirection service and the registered pseudo name 'Hadley' may also use the pseudo name 'redirect' to imply a redirection mail service or a mail holding service.

Once the user has completed steps 100 to 110, the registered pseudo name is displayed (by means of writing, printing or other scribing means) on the mail object at step 120 and sent to the post office or delivery service through the normal delivery channels.

The mail object is received at a sorting office (distribution centre) or a point of entry (post office)and the mail object is scanned. A scanning system involves the manual process of sorting mail objects and embodies technologies such as optical character recognition, bar code reading, and video coding to sort small packages. An optical character recognition scanner scans the address and a digital camera takes a picture of each mail object from several angles and a computer matches the address with the national address database.

When the optical character recognition scanner (this process can also be carried out manually by a person) detects a pseudo name displayed on a mail object, the pseudo name is interrogated at step 130 to determine the profile associated with the pseudo name. The scanner detects either a pseudo return name and/or a pseudo addressee name and/or a dynamic mail function field. If a pseudo addressee field is present, the scanning system accesses the addressee profile which is date matched and charges the addressee or sender in case of second class mail, a postal service defined fee.

The destination address is determined (date matched) and the mail service which may include additional addressee defined mail services are carried out. Some mail services may carry additional fees, and these are charged using the addressee's or sender's franking profile as appropriate to the mail service. Upon resolution, the 'to address' and delivery date range are printed on a label (or directly onto the mail object) which is attached to the mail for delivery.

The registered pseudo name (either return or addressee) acts as a key identifier accessing the corresponding profile at step 140. If a pseudo return name is present the system checks for the presence of one or more dynamic mail functions placed on the envelope by the sender. If there dynamic mail functions designated on the mail object the dynamic mail function profile linked with the pseudo function name is accessed and the mail service is scheduled if active at step 150.

A dynamic mail function may comprise, but is not limited to, one of the following mail services:

Follow me mail. A mailing address is determined using a follow-me profile. A user of a registered pseudo name can change their address to another person or pseudo name, a vacation address, a hold mail service within a date range, restrict mail delivery to certain listed names, or filter mail from certain names to be delivered to an alternate address.

Mail delivery notification. This service, provided today by special delivery, uses a pseudo name in the return address field combined with a pseudo function of 'mail delivery notification'. A user can specify an automated electronic delivery notice to a given Internet address to be generated when a particular piece of mail has been scheduled for delivery or actually delivered. The user can also specify a physical notice to be generated and mailed to a designated pseudo name. This provides an additional advantage of multiple party and legal auditing of mail delivery. The addressee can also specify mail delivery notice for received mail. In this case the addressee receives an e-mail notification of mail received based on the e-mail address in the addressee's pseudo profile.

Vanity stamps. Using a registered pseudo name the user can register a personalised image to be printed as a stamp on the envelope. This service is accessed when a sending field dictates the service is desired and the user's franking profile contains a link to a stamp image to be used. The 'stamp' is printed on the envelope.

Bulk mail. Unaddressed bulk mailing is sent with a pseudo function of 'bulk mail: distributed to a list. The user's profile is accessed to determine which particular bulk mail service is requested. This can include automated bulk addressing and franking, thus sending only to customers that do not have bulk mail blocked. Blocking can be specified for second class mail and standard mail.

The scanning system scans from a supplied list of users and filters from the supplied list all eligible receivers (e.g., junk mail not blocked when a pseudo name is found in the supplied list), and addresses each piece of bulk mail to the eligible recipients.

Optionally, if a copy service is activated, the service is routed to an associated service which will copy and distribute mailings from a supplied (hard copy or electronic) source. The sender of the bulk mail pays for the current franking charge and the follow-me service charges by accessing a franking profile of the sender and a using fine grained transaction protocol. Bulk mailings which originate electronically can also by Faxed or e-mailed where the recipients follow-me profile allows and the senders pseudo function profile allows.

Postage due. When a mail object is received with postage due, the user may, via the user's pseudo name profile, indicate that postage due mail is to be franked automatically and can therefore be delivered to the addressee's address without delay.

Mail tracking service. By using a pseudo name in the addressee field and a function code of 'mail tracking', a sender can receive automatically generated Internet messages which describe the stage of mail delivery for any particular piece of mail. It is triggered by a pseudo function 'mail tracking'. Tracking is also available to the addressee when enabled by the sender. Tracking notification can also be accomplished by interrogating the mail tracking service directly rather than receiving an Internet mail notice.

Resolve address service. A mail or a package distributor can access a pseudo name database to specify a pseudo name and receive a location in return. An Internet service can input a pseudo name and receive an e-mail address if one is provided in the pseudo profile. The registered pseudo name owner can block this resolution service.

Figure 2a depicts the structure of a pseudo name as displayed in an addressee field on a mail object. A pseudo name is surrounded by // (denoting the start of a pseudo name) followed by a letter of the alphabet, in this instance the letter N is used to denote an addressee pseudo name, followed by a colon. The pseudo name is followed by // to denote the end of the entry i.e. //N:// 200. Examples of addressee pseudo name formatting are //N:Tracom//,//n: tracom// 205 or //n: IBM PC sales// 210.

Turning to Figure 2b, the structure of a 'return to' pseudo name is shown. Again the format is similar to the format illustrated in Figure 2a except the 'return to' pseudo name is denoted by the letter 'R' or 'r' 215. The examples shown are //R: Barry Lubart// 220 or //r: My favourite Uncle/ 225, illustrating the range of pseudo names that can be used. It is further possible to use a URL as a registered pseudo name for example 'www.tracom.co.uk' and is placed on the envelope in a pseudo name field.

The naming structure as depicted in Figures 2a and 2b further provides for a target country designation, which allows a mail object to be routed to a designated person in another country. The format is similar to the formats described in Figures 2a and 2b except a '//country//' designation is prefixed to the pseudo name field. An example of this type of formatting is //country//R:pseudo name or //country//N: pseudo name. If a pseudo name displayed on a mail object is not prefixed with a target country designation, the sender's pseudo name country and the receiver's target country are taken to be the same. For example if the sender is sending a mail object from within the U.K and the receiver pseudo name does not comprise a target country designation, it is presumed that the receiver is located in the UK.

Lastly, referring to Figure 2c, the structure of a dynamic mail function is illustrated. The structure is identical to those shown in Figure 2a and 2b, except a dynamic mail function is denoted by the letter F or f. In this instance the mail services specified are //F: vanity stamps// or //f: notify on delivery//230.

It will be appreciated by a person skilled in the art that the above profiles can be modified to comprise other pseudo names, identifying letters, identifying words, country designations and mail services, without departing from the spirit and scope of the invention.

Turning to Figure 3a, an envelope 300 is shown with a current addressing format. An addressed envelope 300 comprises a name and address (addressee) field 310 informing the postal service who to deliver the envelope to, a stamp 315 to show that the carriage has been paid and an optional return to field 305 informing the postal service whom to send the envelope 300 back to if the envelope 300 is unable to be delivered.

Referring to Figure 3b, it can be seen how a current addressing format can be mapped to incorporate the present invention. An envelope 300 displays a pseudo name 325 and 335 and the type of mail service 340 to be carried out displayed on the envelope 300. It is important to note that the two formats can be intermixed and one format does not make the other format obsolete.

A '//R: pseudo name//' 325 is used in place of the return name and return address 320 and a '//N pseudo name//' 335 is displayed on the envelope 300 instead of the name and address of whom to send the mail object to.

A dynamic mail function '//F: mail service//' 340 may be displayed on the envelope 300 informing the post office or delivery service which mail service to perform according to the details contained within the profile set up by the user.

The stamp field 315 may be left blank and if neither field shows a pseudo name, or upon resolution via profile indication, neither pseudo name is willing to pay for the mail, then the mail is considered as not having a stamp and normal postal postage due procedures apply for unstamped mail.

Figure 4 depicts an envelope 300 and pseudo name formatting 325, 335 and 340. The scanning system scans each of the pseudo names and using the key identifier accesses the appropriate profile.

Each pseudo name is linked to a profile 400 for example, a naming psuedo name 325 (addressee and return), is linked to a naming profile 425, a mail service pseudo name 340 is linked to a dynamic service profile 430 and the stamp field 315 is linked to a franking profile 435.

The naming profile 425 comprises details such as the user's name, addressee details and return to address details etc. Using an example, a mail object addressed with a //N: tracom// 335, is received by a sorting office and a scanning system scans //N:tracom// and locates the associated naming profile 425 to determine where the envelope 300 is to be delivered to. The same process for //R:Hadley// 325 is carried out to determine to whom or to where the envelope 300 should be return too if undelivered.

Envelope 300 comprises an optional //F:Dynamic mail function// 340 designation, again this is scanned to locate the associated dynamic function profile 430 in 'Hadley's profile, which details which mail service the user has requested to be carried out for example notify when delivered.

Lastly, if a stamp 315 has not been placed on the envelope 300, the scanning system accesses the associated franking profile 435 (again associated with Hadley). The franking profile 435 details the method of payment to be used at a particular time as configured by the user. The payment method can be by credit card, charge card, debit card or by redirecting the mail object to another person for the recipient to pay.

The presence of 'tracom' 335 on the envelope may indicate that a follow-me mail service is active. In this instance, for first class mail tracom's franking profile 435 is accessed and charged a small follow-me service fee.

In another example if a mail object is sent as second class mail Hadley's franking profile is accessed and charged the small additional fee for use of the follow-me service.

Each time a profile is accessed by the scanning system various security checks are performed before a dynamic service can be carried out. The scanning system checks whether the pseudo name is a registered pseudo name and whether the date range applicable to the registered pseudo name is applicable 440. If a pseudo name is not a registered pseudo name the dynamic service can not be performed.

Similar checks are carried out for a dynamic mail function profile 430 and a franking profile 435. The scanning system performs a check to determine whether the dynamic mail function has a valid date range 445 and if it is a valid mail service offered by the postal service.

Further security checks are performed with regards to the franking profile 435 to determine if a password is a valid

password, a payment method is a valid payment method 450, another registered pseudo name is an authorised registered pseudo name for the redirection of payment etc.

Rather than using the traditional method of paying for a stamp for the carriage of the mail object, a user can set up a franking profile 435 to detail various methods of payment. The user can define a list of other registered pseudo names whom the user will accept charges from. An example of this is shown in Figure 5.

Figure 5 illustrates two franking profiles one for pseudo name '//My son at university//' 500 and the other for '//Dad//' 535. For illustration purposes '//My son at University//'500 is a registered pseudo name and is the son of another registered pseudo name '//Dad//' 535.

Whenever '//My son at univeristy//' 500 sends a mail object (to anyone) the pseudo name is placed in the return field i.e. '//R:My son at University//' 405 and the pseudo name profile designates that //dad// will pay for any franking fee.

On this occasion '//My son at university//' does not place a stamp 315 on the mail object. The scanning system detects the use of the pseudo name '//My son at University// 500' and because there is no stamp 315 on the envelope 300, the profile 515 for '//My son at university//' 500 is accessed to find the franking profile 505 for mail sending charges.

In this case '//My son at University//'s' 500 franking profile 505 indicates that charges are redirected to (paid by) //Dad//'535.

'//Dad//'s' 535 profile 520 is accessed to locate an associated franking profile 510. The franking profile 510 contains an accept list 560 which comprises a list 525 of registered pseudo names that //Dad// 535 will accept charges for.

The accept list 560 is examined to determine if '//My son at University//' 500 is authorised to redirect franking to //Dad//'s profile 510. If passwords 545, 550 and a date range 555 allow this charging, '//Dad//'s' franking profile 510 is again accessed to determine how charging is to occur. In the example in Figure 5, the method of payment specified is via a credit card 530, but the payment could equally be by a debit card, a postal service customer account with the user being billed on a monthly basis or by a mail service 'top up' card with the 'top up' card containing a particular amount of monetary credit. Amounts available are refreshed whenever the minimum threshold amount is reached.

Depending on the service performed, the sender's franking profile or the recipient's franking profile is accessed to register the mail transaction. A defined charge is registered using a fine-grained transaction technique, similar to motorway toll charging. A predefined amount may be kept in an account for charging purposes. When a charge occurs it is registered but credit card activity only occurs when a defined minimum is reached by a charge. At that time the credit card is charged with a replenish amount, which updates the available amount in the user's franking profile.

Thus an additional charge for use of a pseudo name service can be accrued and billed as each use of a service requires.